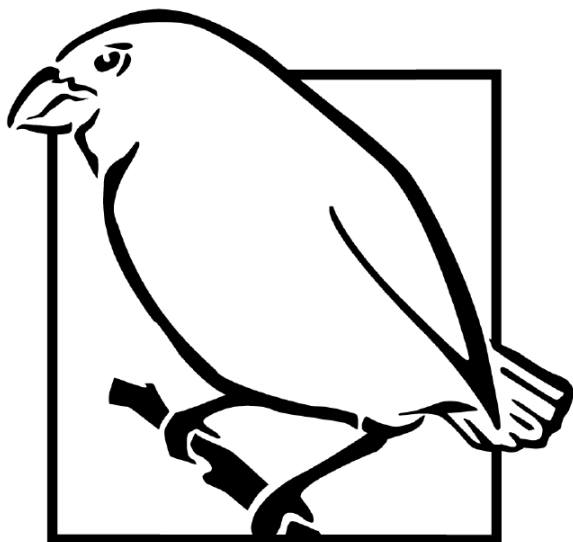


Newsletter

December 2021



A turtle returning to the sea on Isles Bay after having laid her eggs and had a satellite tag attached, Credit: Jack Wiggins



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Funded by the UK Government, The Darwin Initiative provides grants to support developing countries to conserve biodiversity and reduce poverty, with Darwin Plus focusing its grants on the natural environment and climate change in the UK Overseas Territories (OTs).

Projects support:

- the Convention on Biological Diversity (CBD)
- the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- the Nagoya Protocol on Access and Benefit-Sharing (ABS)
- the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)
- the Ramsar Convention on Wetlands
- the Convention on the Conservation of Migratory Species of Wild Animals (CMS)
- the United Nations Framework Convention on Climate Change (UNFCCC)
- the Global Goals for Sustainable Development (SDGs)


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Australian Pine, Turks and Caicos Islands, Credit: Brianna Walcott

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Kirindy forest, Madagascar, Credit: Fetra Arivony Rakotondrazanany

Publicity and information about the Darwin Initiative

For more information on the Darwin Initiative including details about current and completed Darwin Initiative projects, and their final application forms, please visit darwininitiative.org.uk. For Darwin Plus, please visit dplus.darwininitiative.org.uk.

We also have a blog, that includes news and thoughts on issues being tackled by the Darwin Initiative – both at the project and programme level. You can read it here blog.darwininitiative.org.uk

We're also keen to share other Darwin project blogs. If you have a blog you'd like to share on our website, please get in touch at darwin-newsletter@ltsi.co.uk

Publicity and referencing Darwin Initiative

We kindly remind project leaders that if they are publicising their work then it is important that they make every effort to mention Darwin Initiative funding. This is important as it helps us to ensure the Darwin Initiative retains a high profile and secures continued Government funding.



One of the last remaining Lesser Antillean iguanas on Anguilla, Credit: Anguilla National Trust

A word from Darwin

Formally launched in 2012, this year will see the 10th Round of Darwin Plus! Darwin Plus was created to help deliver long-term strategic outcomes for the natural environment in the UK Overseas Territories (UKOTs) - many of which are islands.

Our “Islands of Biodiversity” newsletter therefore aims to showcase some of the incredible work achieved by Darwin Plus and Darwin Initiative projects since the introduction of the scheme and highlight the long legacy of work done by many projects that have made a lasting impact on some of the world’s most delicate and complex ecosystems and endemic species.

In this newsletter, we hear from a variety of our projects exploring sustainable ways of managing and cultivating

materials including the exploration of long-term solutions to inundations of sargassum in Turks and Caicos Islands and cultivating endemic yam species in Madagascar to improve livelihoods and provide food security for local communities.

This edition also features projects focusing on safeguarding biodiversity in island communities by developing conservation strategies for the Lesser Antillean iguana in Anguilla and marine turtles in Montserrat, and raising awareness of the importance of biodiversity to local communities throughout the Caribbean UKOTs.

Happy holidays from the Darwin Initiative team and we hope you enjoy this edition of the newsletter!



Lesser Antillean iguana, Anguilla,
Credit: Anguilla National Trust

Rescuing Anguilla's last population of Lesser Antillean iguanas

The Critically Endangered Lesser Antillean iguana (*Iguana delicatissima*) has long been threatened across its Caribbean range by factors including habitat loss, hunting and predation by introduced mammals. Today, however, the most widely reported threat is competition and hybridisation with the common green iguana (*Iguana iguana*), a highly invasive species from Latin America. Hybridisation between the two species results in fertile offspring. Reports from Guadeloupe, Martinique, and other Lesser Antillean nations show that when the common green iguana is present, native iguanas typically disappear within a few decades.

The UK Overseas Territory of Anguilla once provided critical habitat for the Lesser Antillean iguana. In 1995, invasive green iguanas were first reported on Anguilla, with individuals recorded arriving on pieces of driftwood following a hurricane. Since then, the invasive iguana has spread widely across mainland Anguilla and begun hybridising with the local population. While the two species can be distinguished visibly by their morphological characteristics, experiences from other Caribbean islands have highlighted that eradicating or even controlling introduced green iguanas is both practically and financially challenging. The establishment of new populations on islands that have not yet been invaded may be the only hope for the survival of this species in Anguilla.

Between 2015-2020, the Anguilla National Trust, with assistance from Fauna & Flora International and Durrell Wildlife Conservation Trust, has rescued and relocated 23 Lesser Antillean iguanas from mainland Anguilla to the uninhabited island of Prickly Pear East, which we are actively protecting from invasive green iguanas.

As part of Darwin Plus funded project '*Future proofing endangered species conservation in Anguilla*', recognising the risks to our small founder population from inbreeding depression, the Government of Dominica donated a further ten subadult Lesser Antillean iguanas to bolster our population. In a further effort to boost population growth, project partners are also working on creating more suitable nesting sites on the island by clearing small patches of vegetation and creating sandy mounds.

This bold conservation strategy appears to be working: more than a dozen juveniles were recorded on Prickly Pear East for the first time in 2019. The additional animals from Dominica will further strengthen and increase the size and resilience of this population thus enhancing the population's chances of adapting to emerging threats such as climate change and disease.

Written by Louise Soanes. For more information on project DPLUS086, led by Anguilla National Trust, please click [here](#).



Practicing diving hole for yam cultivation,
Credit: Fetra Arivony Rakotondrazanany

Securing healthy Baobab populations through efficient fruit harvesting and yam cultivation

Since 2015, the Royal Botanic Gardens (RBG), Kew and its partners have investigated and implemented projects to conserve and sustainably use Madagascar's endemic yams species through cultivation to improve food security and rural communities' livelihoods (projects **22-005** and **EIDPO046**). During these projects, the team developed methods to cultivate and sustainably harvest yams and collected information on yams throughout different parts of Madagascar, including the northern Menabe Region. Currently, communities in northern Menabe have continued to cultivate yams and alongside forest conservation and restoration.

Since 2018, Madagasikara Voakajy, in partnerships with Label CBD Consulting, Fauna & Flora International and the Direction Régionale de l'Environnement et du Développement Durable (DREDD) Menabe, implemented the project '*Securing healthy baobab populations through efficient fruit harvesting and use*'.

“ This project focused on improving people's livelihoods and food security for three villages in southern Menabe, namely Andohaviana, Bepeha and Betankilotra

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This project focused on improving people's livelihoods and food security for three villages in southern Menabe, namely Andohaviana, Bepeha and Betankilotra. This project will end in March 2022, and we expect the communities to continue harvesting and using baobab fruits efficiently. However, we recognise that baobab fruits will have limited impact on improving livelihoods and food security. This is why a visit to the communities adopting the yams cultivation and sustainable harvesting was organised in November 2021. The visit aimed to (i) assess if yam cultivation could be replicated in southern Menabe, (ii) learn how the forest is managed in other areas, and (iii) increase knowledge and skills in the communities around nurseries and tree planting.

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Our forests degraded for multiple reasons, including clearing for agriculture, fight against the bandits, wildfire, etc - we can still save and restore the remaining forest

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The visit took place in the villages of Marofandilia and Beroboka and by the end of the visit, participants from the southern Menabe communities reported their satisfaction. Pelatsara, a woman from Andohaviana said:

“The methods they use for cultivating yams are different from ours. I am looking forward to sharing what we learned during the visit to other members of our village, and to apply the techniques with the seeds we brought back”.

Dada who is looking after the nursery in Belafika village said:

“To date, we could only grow baobabs at our nursery. I now have learned about seed treatment for other species. I am looking forward to adding other tree species in our nursery”.

During the trip, the project team also visited Kirindy Forest which is managed by Centre National de Formation, d’Etudes et de Recherche en Environnement et Forestier, which is probably the best dry forest ecosystem left in northern Menabe.

Participants were delighted to see the forest quality and wild animals in the forest, such as lemurs, fossa and birds. Sylvain, the President of Bepeha community and the eldest participant reported that:

“Our forests used to be better than the one in Kirindy. Our forests degraded for multiple reasons, including clearing for agriculture, fight against the bandits, wildfire, etc. We can still save and restore the remaining forest. Our challenge is to return it to its previous status and attract visitors”.

Written by Fetra Arivony Rakotondrazanany. For more information on project 25-026, led by Madagasikara Voakajy, please click [here](#).



Participants Tsilimby and Pelatsara amazed in holding a yam produced by community in Beroboka, Credit: Fetra Arivony Rakotondrazanany



University of Greenwich MSc students collecting data with local rangers, Credit: Debbie Bartlett

Searching for sustainable solutions for sargassum inundations in the Turks and Caicos Islands

Our recently completed project looked at the impact inundations of sargassum had on local people, businesses, and wildlife and investigated the potential for finding a cost effective (or at least cost neutral) way to deal with it. The quantity of sargassum arriving varies from year to year and season, with some beaches being more affected than others. These factors contribute to the difficulty of finding a suitable end use for the material.

The project partners were involved in holding focus groups, conducting interviews, monitoring the amount of sargassum arriving on specific beaches, and taking samples. These were freeze dried and sent back to the UK for chemical analysis in the University of Greenwich laboratories to assess the potential for use as biofuel or manufacturing other products.

The results were written up in two MSc theses, several papers and presented at several conferences. It is widely reported that while sargassum on the beach is a problem for tourism, as it negatively impacts the pristine white sandy beaches, necessitating twice daily removal, the floating rafts of sargassum are excellent habitat and nurseries for many species including marine turtles. The monitoring of near shore habitat strongly suggested that the brown tide associated with sargassum accumulations on the beach was

damaging seagrass meadows through sargassum debris accumulating in these seagrass meadows. This is potentially a serious problem as these are vitally important to the spiny lobster and conch fisheries on which many local people depend for their livelihood. The chemical characterisation of the sargassum carried out during this project has revealed worryingly high levels of arsenic precluding the use of the material in the human or animal food chain and indicating caution is required in identifying sustainable options for use.

Another Darwin funded project focused on marine spatial planning has mapped all the seagrass meadows around the Turks and Caicos Islands. This, in combination with information from the sargassum forecasting now available from the **Sargassum Early Advisory System**, could enable priority areas for removal of floating sargassum to prevent it from damaging the seagrass and negatively affecting wildlife and the fisheries industry.

An educational resource '*Understanding Golden Tides*' is in preparation, with additional notes for teachers, and will be distributed across the Caribbean region affected by sargassum. There is also an ID guide to enable the three different types of floating (pelagic) sargassum to be identified.

Written by Debbie Bartlett. For more information on project DPLUS100, led by University of Greenwich, please click [here](#) or get in touch with Debbie at d.bartlett@gre.ac.uk.



Mangroves in Capuluan Central Village, Philippines, Credit: ZSL Philippines

Small municipalities can be trail blazers in efforts to restore coastal ecosystems and biodiversity in the Philippines

Located in Southern Luzon in the Philippines, Guinayangan is a small municipality in the province of Quezon, which has 40% of its population classed as poor. A small agricultural town, it has been working closely with the International Institute of Rural Reconstruction (IIRR) for the past 10 years on various development projects.

The latest in this long line of projects is one recently funded by the Darwin Initiative, 'Improving Coastal Resilience and Ecosystem Services through Biodiversity Restoration', or ICORE, which started in September 2021.

The project was conceived as a natural progression of

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The project is designed to address the continuing decline in coastal ecosystems in the area, particularly mangroves which are under continuous pressure from deforestation, fragmentation, and conversion to fishponds

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IIRR's previous upland agro-biodiversity projects, with this project focusing on the shores of Guinayangan's coastal barangays (villages). Of the municipality's 54 barangays, 14 are coastal and host around 500 hectares of mangroves and associated vegetation. This new initiative focusing only on coastal communities was jointly conceived and will be implemented with the Zoological Society of London (ZSL Philippines) and the Local Government of Guinayangan.

The project is designed to address the continuing decline in coastal ecosystems in the area, particularly mangroves which are under continuous pressure from deforestation, fragmentation, and conversion to fishponds. Aside from this, the promotion of coastal agro-biodiversity and enterprise developments are being planned to reduce pressure on fisheries resources, to restore agricultural biodiversity, and at the same time offer local communities sustainable and resilient livelihood alternatives.

The project aims to tap into the pool of local champions in the 14 barangays who have been working with IIRR previously to spearhead these new initiatives. Part of the planned activities to address the threats to mangroves include reforestation, management, and nursery development. To take advantage of the season, the project started out to enrich the agricultural biodiversity

by promoting both inter- and intra-species biodiversity: six types of fruit trees specifically chosen for being adapted to coastal areas, five peanut varieties from analogous sites in the Philippines, and two banana varieties were already acquired and distributed to 14 villages. These trees will serve as bioshields protecting homes from winds during monsoons and typhoons.

Aside from working with farmer and fisher groups, ICORE also seeks to actively engage the youth and women sectors. Often neglected in coastal development, these sectors will be actively engaged as part of the project's

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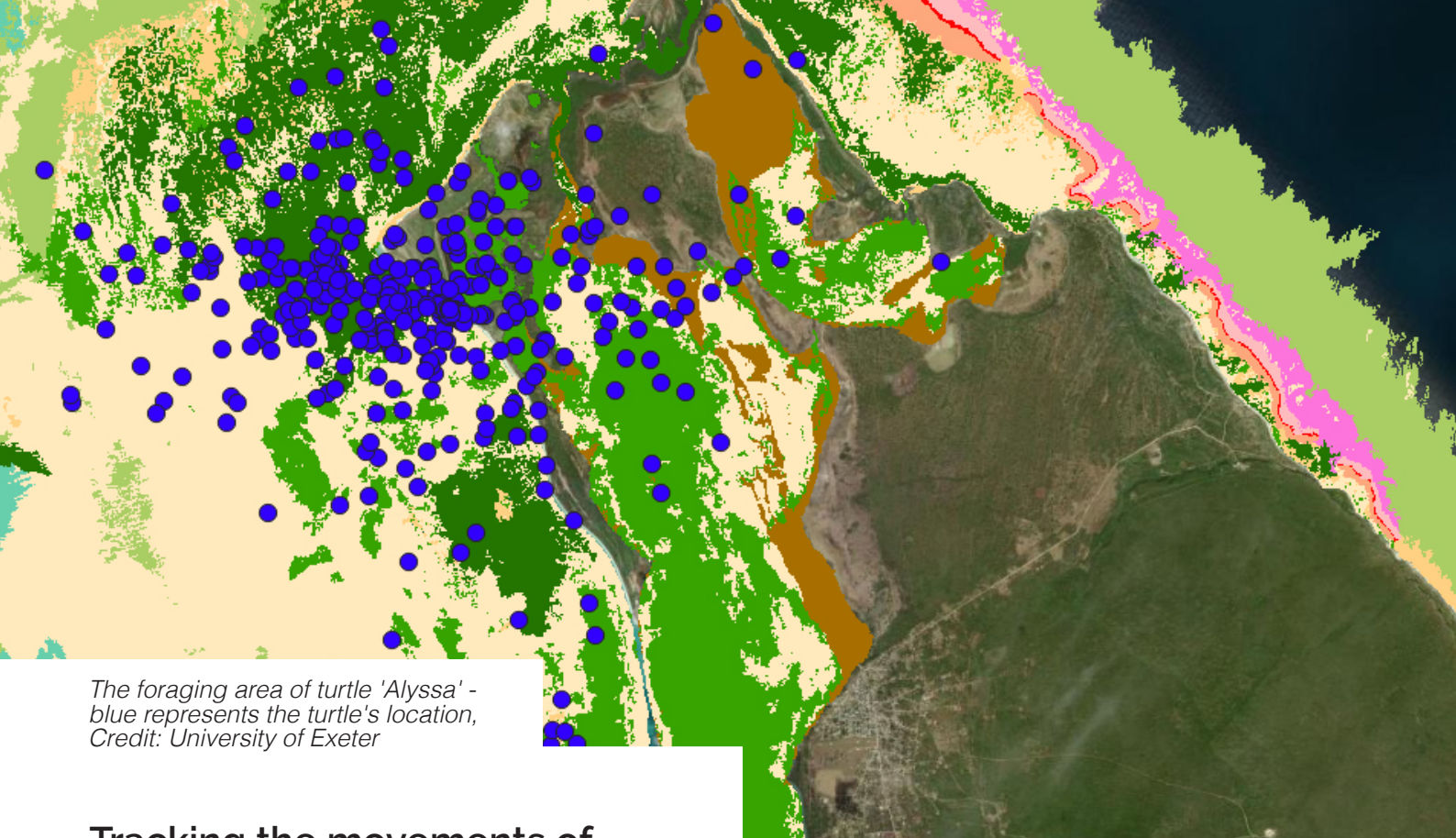
goal of information sharing and inclusivity in reaping the benefits of improved ecosystem services. Women and youth are expected to conserve and protect the restored ecosystems and biodiversity.

In a recently concluded orientation meeting with municipal and barangay officials, Municipal Fisheries and Aquatic Resource Management Council (MFARMC) representatives, and people's organisation leaders, the project's objectives were laid out. The meeting was well received and suggestions on conservation initiatives, livelihood activities, and improvements to legislation came in from the participants. This positive response bodes well for the project, with the promise of continued meaningful partnership between IIRR, ZSL Philippines, and the community over the next three years.

Written by Julian Gonsalves. For more information on project 28-021, led by International Institute of Rural Reconstruction, please click [here](#).



Bundling bioshield development with the objective of restoring fruit tree diversity, Philippines, Credit: ZSL Philippines



The foraging area of turtle 'Alyssa' - blue represents the turtle's location, Credit: University of Exeter

Tracking the movements of Montserrat's marine turtles

In 2019, a team of researchers from the University of Exeter, Government of Montserrat and the Marine Conservation Society (MCS) were awarded a Darwin Plus grant to create and implement a Marine Turtle Action Plan on the UK Overseas Territory of Montserrat. The global pandemic delayed several the outputs, but we are excited now to be able to provide an update from the field.

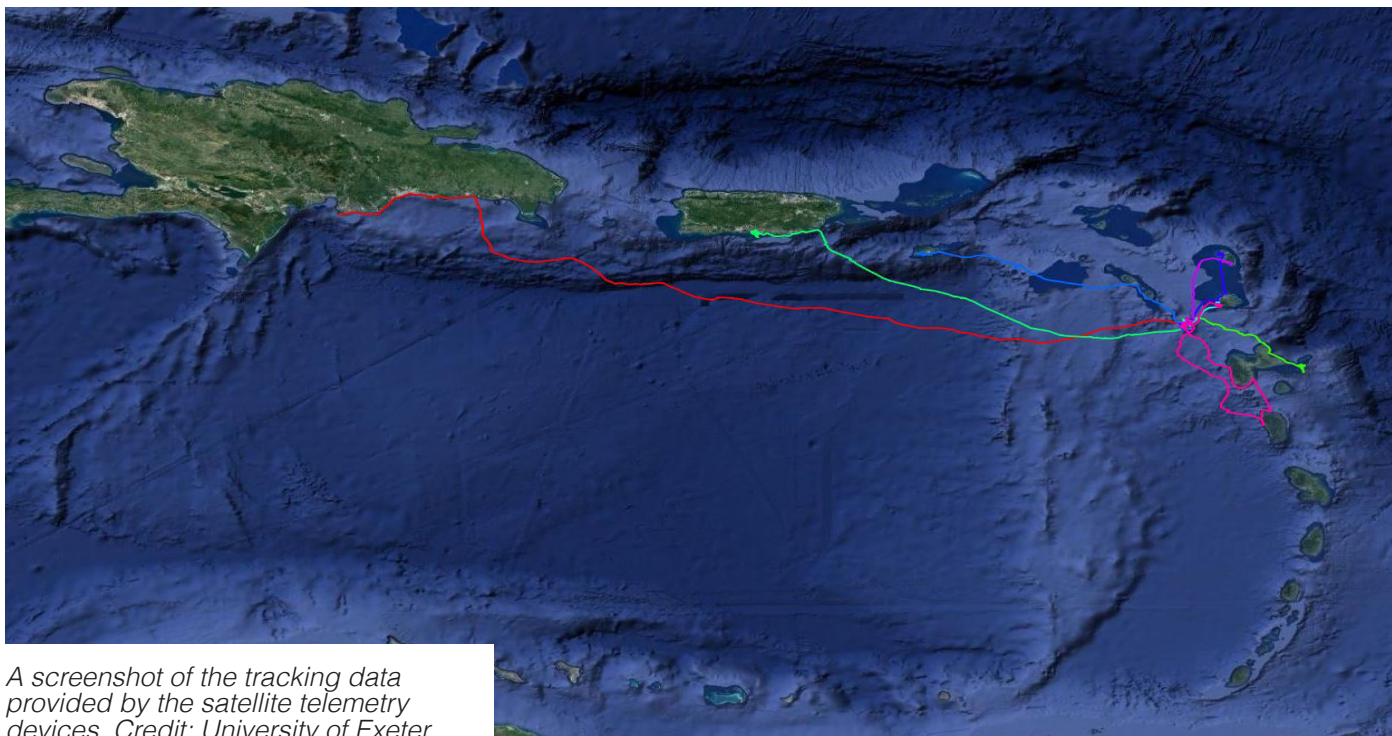
Researchers from the University of Exeter arrived in Montserrat in June 2021 to work alongside staff from the Government of Montserrat and members of MCS during the turtle nesting season. The project aims to collate both social and biological data to help conserve and manage marine turtle populations around Montserrat and potentially within the Wider Caribbean. The island supports regionally important populations of green and hawksbill turtles and also gets occasional visits from loggerhead and leatherback turtles.

After mandatory quarantine and negative PCR test results, the University of Exeter and Fisheries and Ocean Governance Unit (Government of Montserrat) research and monitoring team, began with nesting surveys to help understand how many individuals are nesting along the coast of Montserrat. This was continued throughout the 2021 nesting season and will be used to carry out a baseline nesting population assessment over the next two years to inform future monitoring practices that will be detailed in the Species Action Plan.

These insights were also supplemented by the deployment of satellite transmitters (from Wildlife Computers Inc.) on ten nesting turtles (nine green and one hawksbill), which involved many long nights spent waiting on the beaches until females had finished laying and covering their eggs. This state-of-the-art technology allows us to gain an understanding of the movements of these turtles both around Montserrat during the nesting season and then during their migration back to their feeding grounds. Identifying patterns of space use provides the evidence base needed for managing and protecting important marine areas.

“ Only one turtle from Montserrat has previously been tracked with a satellite telemetry device so there is much excitement around these deployments which will provide a fascinating insight into the secret lives of these turtles once they have left Montserrat's shores ”

For example, regulating boat traffic and fishing activity in areas where turtles are congregating or mating around during the nesting season. Only one turtle from Montserrat has previously been tracked with a satellite telemetry device so there is much excitement around these deployments which will provide a fascinating



A screenshot of the tracking data provided by the satellite telemetry devices, Credit: University of Exeter

insight into the secret lives of these turtles once they have left Montserrat's shores. All the turtles have been given names by people on Montserrat, including school children, media, and environmental workers who are all passionate about their turtles.

At the time of writing, eight of the turtles have begun their migrations after laying 6 – 8 clutches of eggs on Montserrat's beaches, which we can determine using data from the wet/ dry sensor on the satellite tags. The turtles have headed off in different directions, travelling to Antigua, Barbuda, Dominica, Dominican Republic, Guadeloupe, Puerto Rico and St. Croix. The tracks can be viewed in real-time [here](#).



A green turtle post-satellite tag attachment, Credit: Peter Richardson

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The team will work with regional colleagues to build up a detailed picture of the range, foraging grounds and potential threats to the turtles that connect the different island nations
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The two turtles that have remained in Montserrat's waters haven't nested for over a month and their behaviours suggest that they may be resident there year-round. Patterns of movement from the satellite transmitters allow us to assign behaviours to the turtles and to identify times when they have settled in foraging grounds. The team will work with regional colleagues to build up a detailed picture of the range, foraging grounds and potential threats to the turtles that connect the different island nations.

The different aspects of biological research carried out during this project will inform the Marine Turtle Action Plan for Montserrat which will be written after another full season of data collection next year. This is also being informed by knowledge and views of the local community through project partners - the social science team at MCS. More details and blogs from the field season can be accessed [here](#).

Written by Dr Nicola Weber. For more information on project DPLUS106, led by University of Exeter, please click [here](#).



Endemic rock iguana, Turks and Caicos,
Credit: Aravna Lucsama

A report from the Turks and Caicos Islands: biosecurity, iguanas and progress

The Turks & Caicos National Trust (TCNT) is a membership, non-profit, non-governmental organisation dedicated to the preservation of the cultural, historic and natural heritage of the Turks & Caicos Islands (TCI). TCNT was established in 1992 and has conducted many projects on the island to protect the ecosystems in the TCI in collaboration with donors such as the Darwin Initiative and organisations such as RSPB, Audubon Society and Wildlife Management International Limited.

Many companies and organisations struggled during 2020, due to the global pandemic – despite this, when TCI reopened its borders, TCNT made sure to hit the ground running and got back to important conservation related work. One of our main projects funded by the Darwin Initiative and RSPB is 'Strengthening Biosecurity to Protect Turks & Caicos' Iguana Islands'.

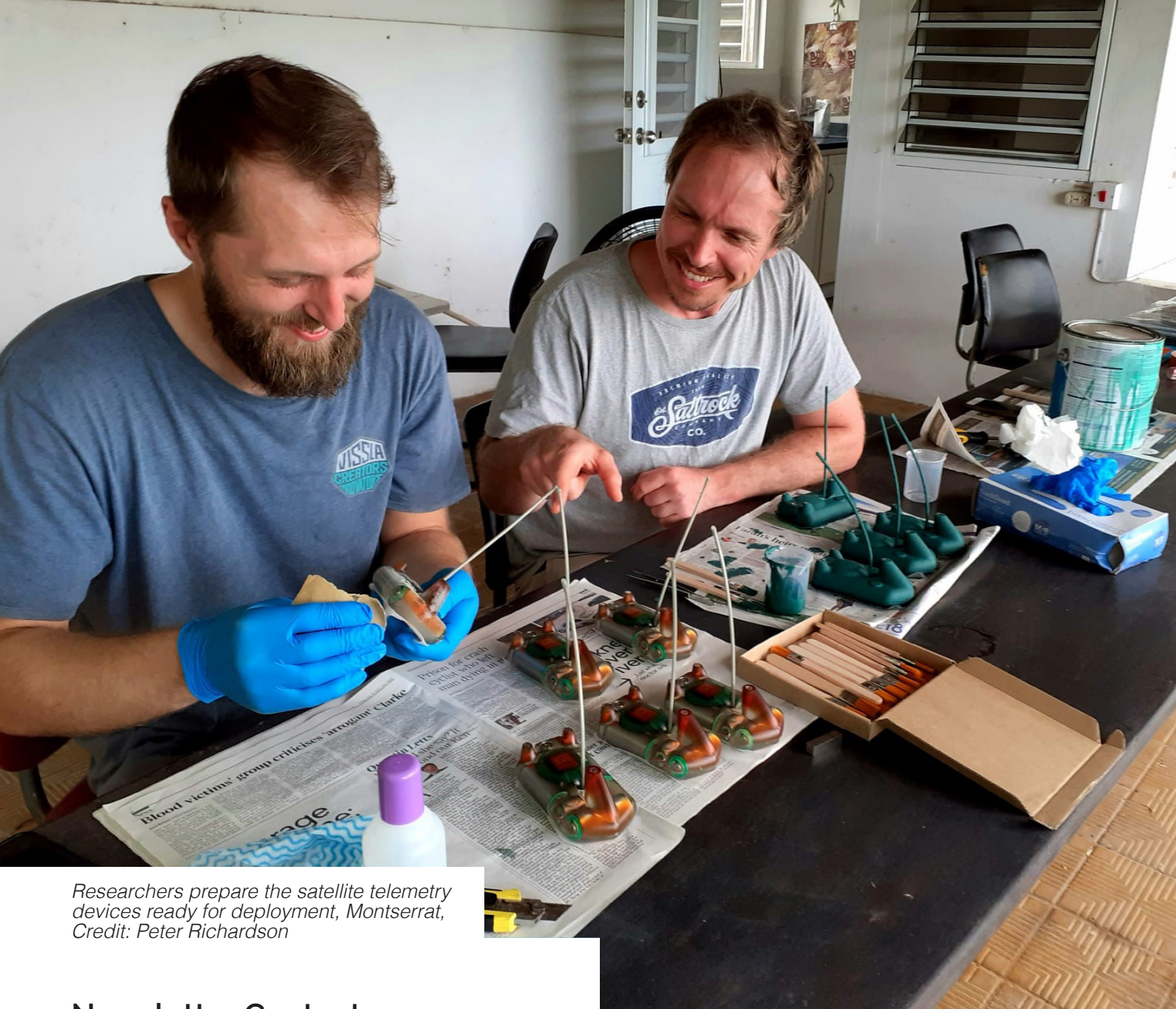
Cats were eradicated from Pine Cay in 2019 and remain absent. Consequently, iguanas have now had two breeding seasons there and on connected islands with no cat predation for the first time since 1974. There have been several sightings of green iguanas in the TCI. Several have been caught and killed and they appear not yet established. This project is supporting the implementation of measures such as a green iguana reporting hotline, a public awareness programme, a database and the creation of teams of volunteers

trained and willing to respond to sightings to prevent the spread of this invasive species. We have also started an Australian pine clearing initiative at one of the key iguana sites to ensure the growth of more native vegetation which are meals for the endemic rock iguanas. As a part of this project we have been able to work with schools throughout the island, educating students about the plight of our rock iguanas being placed on the endangered species list and our biosecurity efforts on Little Water Cay. We have also been working with student field trips bringing them to iguana island to learn about biosecurity and educating them on how to become stewards of the environment to help to protect our endemic rock iguanas.

Rats have returned to Little Water Cay and Pine Cay, however an integrated control plan is being put into operation and two local biosecurity officers have been employed, all supported through the work under our current project.

The goal is not only to continue our ongoing projects but also to extend the work we do and safeguard the biodiversity of the TCI, training native Turks Islanders, and increase the awareness of its importance of biodiversity throughout our islands.

Written by Aravna Lucsama. For more information on project DPLUS121 led by RSPB, please click [here](#).



Researchers prepare the satellite telemetry devices ready for deployment, Montserrat, Credit: Peter Richardson

Newsletter Contacts

The Darwin Initiative Secretariat (Defra)

The Darwin Secretariat is based in Defra and includes Doug Gibbs, Ben Yexley, Elliott Miller, Andrea Hodgson, Serene Hargreaves and Chelsea Goodwin.

For any queries on project applications or existing projects please contact our Darwin Administrators (NIRAS-LTS International) at

darwin-applications@ltsi.co.uk
or darwin-projects@ltsi.co.uk

This newsletter is produced quarterly. To include an article on your project please contact us at

darwin-newsletter@ltsi.co.uk

Funded by the UK Government, The Darwin Initiative provides grants to support developing countries to conserve biodiversity and reduce poverty, with Darwin Plus focusing its grants on the natural environment and climate change in the UK Overseas Territories. Since 1992, the Darwin Initiative and Darwin Plus have committed over £196 million to 1,319 projects in 159 countries.